

In the Claims

1. (Currently Amended) A rotor for an electric motor comprising
~~an essentially a cylindrical rotor core having a central aperture and comprising with a plurality of permanent magnets which are embedded in the rotor core and which extend essentially like spokes through, the permanent magnets extending radially about the central aperture rotor core[[;]];~~
the rotor core being formed as an integral body; and
~~the selected at least two permanent magnets being bridged at their radially bridged inner or outer ends by recesses an inner recess~~ in the rotor core.
2. (Cancelled.)
3. (Currently Amended) A rotor according to claim 1-2, ~~e h a r a c t e r i z e d in that wherein~~ like poles of the at least two permanent magnets are bridged at the radially inner ends of two adjacent permanent magnets by ~~a the inner~~ recess in the rotor core.
4. (Currently Amended) A rotor according to claim 12, ~~e h a r a c t e r i z e d in that wherein the permanent magnets are arranged in pairs like double spokes in the rotor core, the at least two permanent magnets of each pair being are magnetized in the same magnetic direction, and that adjacent pairs are bridged at the radially inner ends of two adjacent permanent magnets by a recess in the rotor core.~~
5. (Currently Amended) A rotor according to claim 1, ~~e h a r a c t e r i z e d in that wherein~~ the permanent magnets are enclosed by the rotor core at least at ~~an their~~ radially inner end ends or ~~their~~ radially outer ~~at an outer end~~ ends.
6. (Currently Amended) A rotor according to claim 1, ~~e h a r a c t e r i z e d in that wherein~~ the rotor core defines a plurality of has bridges at about the central aperture ~~which enclose and the bridges enclose the inner recesses~~.

7. (Currently Amended) A rotor according to claim 6, ~~e h a r a c t e r i z e d i n t h a t~~
wherein the bridges form a closed ring an enclosure.
8. (Currently Amended) A rotor according to claim 6, ~~e h a r a c t e r i z e d i n t h a t~~
wherein the bridges bridge span radially between the radially inner ends of two adjacent permanent magnets.
9. (Currently Amended) A rotor according to claim 1, ~~e h a r a c t e r i z e d i n t h a t~~
wherein the recesses are filled with air or any other a non-magnetic medium.
10. (Currently Amended) A rotor according to claim 1, ~~e h a r a c t e r i z e d i n t h a t~~
wherein the rotor core is made from a further comprises a ferromagnetic material.
11. (Currently Amended) A rotor according to claim 1, ~~e h a r a c t e r i z e d i n t h a t~~
wherein the rotor core is made of stacked further comprises sheet metal laminations.
12. (Currently Amended) A rotor according to claim 1, ~~e h a r a c t e r i z e d i n t h a t~~
wherein the rotor core has further comprises a plurality of slots into which the for receiving permanent magnets are inserted.
13. (Currently Amended) A rotor for an electric motor comprising:
an essentially cylindrical a rotor core having a central aperture and comprising a plurality of permanent magnets which are embedded in the rotor core, the permanent magnets extending radially about and extend essentially like spokes through the rotor core,
the rotor core being formed as defining an integral body, and
the rotor core being provided with defining a plurality of inner recesses to influence the magnetic field of the permanent magnets.

14. (Currently Amended) A rotor according to claim 13, ~~e-h-a-r-a-c-t-e-r-i-z-e-d in that wherein the recesses adjoin selected each inner recess adjoins at least two permanent magnets.~~
15. (Currently Amended) An electric motor comprising a stator and a rotor; ~~having a~~ the rotor having comprising:
~~an essentially cylindrical rotor~~ a core having with a central aperture and comprising a plurality of permanent magnets which are embedded in the rotor core and which extend essentially like spokes extending radially about the central aperture through the rotor core,
~~the rotor core being formed as an integral body,~~ and
~~the selected~~ at least two permanent magnets being bridged at their radially inner or outer ends a radial end by recesses an inner recess in the rotor core,
~~the rotor~~ core being fitted onto coupled to a shaft and enclosed by the stator enclosing ~~the rotor.~~
16. (New) In an electric motor having a stator for receiving a rotor (10) coupled to a shaft (12) through a sleeve (14), the rotor (10) defining a plurality of cavities for receiving permanent magnets (18) and a plurality of flux guides (16) disposed between adjacent permanent magnets, the improvement comprising an integrated rotor body defining a recess (32) for magnetically relating adjacent magnets (30) and a central aperture (28) for directly coupling the rotor (20) to shaft (12).
17. (New) The electric motor of claim 16, wherein the rotor further defines an outer bridge (24) and an inner bridge (26).
18. (New) The electric motor of claim 16, wherein the rotor (20) is substantially cylindrical.

19. (New) The electric motor of claim 16, wherein the recess (32) bridges the like poles of the adjacent permanent magnets (30).
20. (New) The electric motor of claim 16, wherein the adjacent magnets (30) are substantially parallel.
21. (New) The electric motor of claim 16, wherein the adjacent magnets (30) are at an acute angle with respect to each other.
22. (New) The electric motor of claim 16, wherein the rotor (10) forms a ring about the shaft.
23. (New) The electric motor of claim 16, wherein the rotor (10) further comprises a plurality of outer periphery recesses (68).
24. (New) A rotor for use with an electric motor (114), the rotor (10) comprising:
a central aperture 28 for receiving a shaft (12), a plurality of flux guides (22) defining therebetween a plurality of primary recesses (30) for receiving magnetic devices (54, 54') and a plurality of secondary recesses (32) magnetically connecting magnetic devices (54, 54').
25. (New) The rotor of claim 24, wherein the secondary recess (32) couples like poles of magnetic devices (54, 54').
26. (New) The rotor of claim 24, wherein the rotor (10) further comprises at least one outer periphery recess (68).
27. (New) The rotor of claim 26, wherein the at least one outer periphery recess (68) is positioned adjacent to primary recess (30).

28. (New) The rotor of claim 24, wherein the plurality of flux guides (22, 46) further comprise ferromagnetic sheet metal laminates.

29. (New) The rotor of claim 28, wherein the ferromagnetic sheet metal laminates prevent electromagnetic eddy current.

30. (New) An electric motor comprising:

a stator (34) having a stator core (36) and at least one stator winding (38);

a rotor assembly (20) separated from the stator (34) by a gap, the rotor defining a central aperture (28), a plurality of flux guides (22), a plurality of slots (70) for receiving permanent magnets (54, 54'), and a plurality of recesses (58) for magnetically connecting permanent magnets (54, 54');

a shaft (110) radially coupled to the rotor assembly (20) through the central aperture (28); and

a motor housing (114) for receiving the stator, the rotor and the shaft.

31. (New) The electric motor of claim 28, wherein the rotor assembly (20) further comprises at least one outer periphery recess (68).

32. The rotor of claim 31, wherein the at least one outer periphery recess (68) is positioned adjacent to primary recess (30).

33. (New) The rotor of claim 28, wherein the plurality of flux guides (22, 46) further comprise aferromagnetic sheet metal laminates.

34. (New) A method for substantially reducing electromagnetic eddy current formation in an electromagnetic motor having a stator assembly (34) about a rotor assembly (20), the method comprising:

defining a plurality of recesses (32) in the rotor assembly (20), the plurality of recesses (32) electromagnetically connecting a magnetic pole from a first magnet (54) to the magnetic pole from a second magnet (54');

forming a plurality of flux guide elements (22) in the rotor assembly (34) to separate the first magnet (54) from the second magnet (54'), the flux guide elements adopted to prevent formation of eddy current;

coupling the rotor assembly (20) to a shaft (110) through a central aperture (28) of the rotor assembly (20).

35. (New) The method of claim 34, further comprising forming a plurality of secondary recesses (68) at the outer periphery of the rotor assembly (20).

36. (New) The method of claim 34, wherein the first magnet and the second magnet are positioned parallel to other.

37. (New) The method of claim 34, wherein the step of connecting the magnetic pole from the first magnet (54) to the second magnet (54') further comprises electromagnetically connecting the like poles from each of the first and the second magnets.